

REMARKS

The following issues are outstanding in the pending application:

- Claims 1-15 and 17-22 are rejected under 35 USC 103.

1 and 18 have been amended in order to more clearly define the subject invention. Amended independent claims 1 and 18 now recite a method for forming a texturized proteinaceous meat analogue and the texturized proteinaceous meat analogue product in which a mixture is provided containing about 20 to 80% by weight edible proteinaceous materials, up to about 5% by weight of edible mineral binding and cross-linking compounds; and up to about 50% by weight of an edible humectant system consisting of a mixture of glycerol and glucose. The mixture is subject to mechanical pressure and heat sufficient to convert the mixture into a hot protein lava that is extruded to obtain a cohesive, texturized, extrudate slab or ribbon that forms the meat analogue product having a relative water activity of lower than about 0.8. No new material has been added as a result of the amendment.

35 USC 103

Claims 1-15 and 17-22 are rejected under 35 USE 103(a) a having subject matter unpatentable over WO 2000/69276 to Howsam in vie of U.S. Pat. No. 6,277,420 to Andersen et al. Applicant respectfully traverses this rejection.

Howsam is directed to a high moisture level texturized protein product (TPP) formed from non-animal protein in an extrusion cooking process in which the TPP closely resembles an animal protein product in texture and structure, such as flaked fish meat or shredded chicken meat. The Howsam TPP includes non-animal edible proteinaceous materials, edible mineral binding and cross-linking compounds and has a moisture content of between about 40-60%. The Howsam-type product is intended for use in canned foods and the product would be similar to sausage having a similar water content of between 40-60%, which results in a water activity of about 0.85 to 0.95. Thus, the Howsam TPP would have a water activity greater than 0.8. See the attached white paper titled "Water Activity: The Key to Pet Food Quality and Safety" by B. Carter and A. Fontana, Jr. Ph.D. www.decagon.com.

Andersen et. al is directed to a pet chew having an outer shell of natural or reformed rawhide and an inner cylinder of shelf-stable meaty filling set into a firm gel. The meaty filling includes fresh meat, dehydrated meat or meat by-products, a sweetener or combination of sweeteners (10-40%) and humectants such as glycerol, propylene glycol or sorbitol. A low water activity is desired to reduce migration of water from the filling to the outer shell.

Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), controls the consideration and determination of obviousness under 35 U.S.C. 103(a); *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734-35, 167 L. Ed. 2d 705, 715 (U.S. 2007). The four factual inquires enunciated therein for determining obviousness are: (1) determining the scope and contents of the prior art; (2) ascertaining the differences between the prior art and the claims in issue; (3) resolving the level of ordinary skill in the pertinent art; and (4) evaluating evidence of secondary considerations.

In this case, neither the level of ordinary skill in the art, nor secondary considerations are at issue. However, in order to assess the scope and content of the prior art properly, a thorough understanding of the invention must be acquired by studying Applicant's claims and the specification. M.P.E.P. § 2141. Thus, the inquiry begins with construction of Applicant's claims, explained below. Next, when ascertaining the differences between the prior art and the claims at issue, both the invention and the prior art references as a whole must be considered, and *all* claim limitations must be considered when determining patentability of Applicant's invention. M.P.E.P. §§ 2141; 2143. When this is properly done in this case, as shown below, it becomes clear that differences exist that preclude obviousness. And finally, the test for obviousness requires identification of a reasonable basis for combining the claimed elements in the claimed fashion. *KSR*, 127 S. Ct. at 1741; M.P.E.P. §2143. As shown below, this requirement is not met in this case, and no *prima facie* case for obviousness is made.

Applying the proper test to this case begins with amended independent claims 1 and 18 which require at least "providing a mixture containing about 20 to 80% by weight edible proteinaceous materials selected from the group consisting of predetermined mixtures of defatted soy flour, soy meal, soy concentrate, cereal gluten and egg white powder, and up to about 50% by weight of an edible humectant system consisting of a mixture of glycerol and

glucose and thereafter converting the mixture into a hot protein lava that is extruded to obtain a cohesive, texturized, extrudate slab or ribbon that forms the meat analogue product having a relative water activity of lower than about 0.8.”

The Howsam reference does not teach a mixture that includes an edible humectant system consisting of a mixture of glycerol and glucose and forming a meat analogue product having a relative water activity of lower than about 0.8. The Howsam reference teaches a high moisture level texturized protein product (TPP) that includes edible proteinaceous materials (which are substantially if not completely from non-animal protein sources) and edible mineral binding and cross-linking compounds that forms a texturized meat analogue product having a moisture content of between about 40-60% which results in a water activity greater than 0.8. In addition to not including the an edible humectant system consisting of a mixture of glycerol and glucose, the Howsam meat analogue product has a water activity greater than 0.8. In order to make a proper *prima facie* case for obviousness, all claim limitations must be accounted for. M.P.E.P. § 2143.03. This rejection fails to consider all elements of the claims and their meaning. Thus, the claims are erroneously rejected over the Howsam reference and Applicant respectfully requests the rejection be removed.

Just as there is no teaching of a texturized meat analogue product that includes an edible humectant system consisting of a mixture of glycerol and glucose and has a relative water activity of lower than about 0.8, there is also no rational basis provided in the Action for combining the claimed elements in the claimed fashion, as the law requires. *KSR*, 127 S.Ct. at 1741. The Action states that the reason for combining the elements is that it would be obvious to one of ordinary skill in the art to modify the teachings of Howsam by adopting and using the teachings of Andersen et al. to receive the benefit of a product having reduced water activity and resisting drying out. However, the Andersen reference is directed a pet chew having an outer shell of natural or reformed rawhide and an inner cylinder of shelf-stable meaty filling set into a firm gel. The meaty filling includes fresh meat, dehydrated meat or meat by-products, a sweetener or combination of sweeteners (10-40%) and humectants such as glycerol, propylene glycol or sorbitol. The pet chew of Andersen is a substantially different product than a texturized proteianaceous meat analogue product which is formed in a substantially different way. As described in the subject specification, reducing the water activity in the Howsam product is not a simple matter. See below:

[0009] “A common way to reduce water activity while maintaining product texture is to incorporate one or more humectant materials in the formulation. However, for the type of product described in WO 00/69276, i.e. high-moisture extruded TPP, it has been found that many of the common humectant systems do not provide a solution to the problem. The incorporation of sugars at 12% by mass of the formulation, as used in other semi-moist pet foods, tended to cause blockages and product burning in the high-shear twin-screw extruders that are necessary for the manufacture of this type of product.

[0010] – “Similarly, the use of a lower viscosity humectant material, such as a sugar solution, resulted in an inability of the process to provide the correct ‘striated’ texture for the product. This is because lower viscosity / higher fluid content feedstocks are not capable of producing a textured extrudate, especially for this type of extrusion.”

[0011] – “Other liquid humectants, such as propylene glycol, are available for extending the shelf life of such TPP products. However, these materials also tend to compromise the texture of the product when added at the levels necessary to produce the shelf-life extension sought. Furthermore, propylene glycol is not suitable for TPP that is to be fed to felines, as it is toxic for these animals. It also tends to produce a flavour taint that is undesirable.”

Thus, as described above, the addition of 10-40% of sweeteners to the Howsam product will not produce the product recited in claims 1 and 18. Nor will the addition of Andersen’s laundry list of humectants to the Howsam product produce the product recited in claims 1 and 18. The discussion in the subject specification and replicated above, provides evidence to the contrary that there is a reasonable expectation of success to produce the claimed invention by modifying the teaching of Howsam with the teachings of Andersen et al. Further, as a meat analogue (also called meat substitute or mock meat) is a food product that approximates the aesthetic qualities and/or chemical characteristics of certain types of meat, any alternation in the appearance of the Howsam product due to the modifications taught by Andersen will result in a product different from the subject invention as recited in amended claims 1 and 18. “A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art.” *KSR* 127 S.Ct. at 1741 (citing *United States v. Adams*, 383 U.S. 39 (1966)). Therefore, Applicant respectfully submits that independent amended claims 1 and 18 are not obvious.

If an independent claim is non-obvious under 35 U.S.C. 103, than any claim depending therefrom is by definition non-obvious. Applicant respectfully submits that claims 2-15, 17 and 19-22 depend at least in part from independent amended claim 1 or claim 18. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejection of claims 1-15 and 17-22 under 35 USC 103(a) as having subject matter

unpatentable over WO 2000/69276 to Howsam in vie of U.S. Pat. No. 6,277,420 to Andersen et al.

CONCLUSION

In view of the above, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 06-2375, under Order No. HO-P03130US0 from which the undersigned is authorized to draw.

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Respectfully submitted,

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